

# CS 150 Lab 10

## Functions and Random Numbers

The objective of today's lab is to combine functions with random numbers.

- Be sure your output looks exactly like the specified output.
- Be sure to submit the completed project to CS150-02 Lab by Friday at 5pm.
- Be sure to follow the coding standards and add comments to your code!

### Lab 10

Write a C++ program in a project called **10\_1\_RockPaperScissors** that will simulate the game of rock paper scissors. The players are the computer and the user. The user will select their choice from a menu, and the computer's choice will be randomly generated. Here are a couple of runs of the program:

```
C:\Windows\system32\cmd.exe
*****
* Rock - Paper - Scissors
*****
Select one of the following:
1. Rock
2. Paper
3. Scissors
4. Quit
Selection: 1
User selected ROCK
Computer selected PAPER
Sorry. You lose.
Press any key to continue . . .
```

```
C:\Windows\system32\cmd.exe
*****
* Rock - Paper - Scissors
*****
Select one of the following:
1. Rock
2. Paper
3. Scissors
4. Quit
Selection: 3
User selected SCISSORS
Computer selected ROCK
Sorry. You lose.
Press any key to continue . . .
```

```
C:\Windows\system32\cmd.exe
*****
* Rock - Paper - Scissors
*****
Select one of the following:
1. Rock
2. Paper
3. Scissors
4. Quit
Selection: 2
User selected PAPER
Computer selected PAPER
It's a draw!
Press any key to continue . . .
```

```
C:\Windows\system32\cmd.exe
*****
* Rock - Paper - Scissors
*****
Select one of the following:
1. Rock
2. Paper
3. Scissors
4. Quit
Selection: 7
Select one of the following:
1. Rock
2. Paper
3. Scissors
4. Quit
Selection: 1
User selected ROCK
Computer selected SCISSORS
Congratulations! You Won.
Press any key to continue . . .
```

In the public folder on Turing you will find a skeleton of the program named `RockPaperScissors.cpp`. Copy this code into your project, then build, and then run. The code lists seven functions that you **MUST** use in your program. These functions are described in the comments. **DO NOT** modify the main program except to comment out some code as you fill in the function definitions. **REMEMBER:** code one function at a time and test each function before moving on.

**Show the instructor or TA your solution**

## Optional Challenge:

1. Modify your program so that the user will continue playing the game until the select 4 to quit the game.
2. Display a tally of number of WINS, LOSSES, or DRAWS.
3. Display the largest number of consecutive wins.

1) Your program is to compile without any errors or warnings.

2) Do not use any magic constants in your program. Define your constants before defining the rest of your program's variables.

Once your project is complete, place your solution PUNetIDLabs into the CS150-02 Drop folder on Turing. Your solution is to have ALL previous projects completely working and correct.